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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 2404637/EJH	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/AU01/00526	International filing date (<i>day/month/year</i>) 9 May 2001	(Earliest) Priority Date (<i>day/month/year</i>) 9 May 2000
Applicant DIATECH PTY. LTD. et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. Certain claims were found unsearchable (See Box I).

3. Unity of invention is lacking (See Box II).

4. With regard to the title, the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

Methods for Identifying Polynucleotide Repeat Regions of Defined Length.

5. With regard to the abstract, the text is approved as submitted by the applicant

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III.
The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1

as suggested by the applicant.

None of the figures

because the applicant failed to suggest a figure

because this figure better characterizes the invention

INTERNATIONAL SEARCH REPORT

International application No.

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos :
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos :
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos :
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 5.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Invention 1 defined by claims 1-22 is to methods of determining the length of a polynucleotide repeat region by annealing defined probes-upstream and downstream of the repeat region, and annealing different length spacer probes between them, followed by ligation of the probe set

Invention 2 defined by claims 23-26 is to methods of determining the length of a polynucleotide repeat region by annealing to the sequence comprising the repeat, in separate reactions, a long and a short upstream probe, and a common downstream probe. The space (if any) between the annealed probes is then infilled using a DNA polymerase, and subjected to ligation.

The common features of probe hybridisation and ligation are not novel, and cannot provide a unifying special technical feature as required by Rule 13.2 of the PCT

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

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International application No.

PCT/AU01/00526

A. CLASSIFICATION OF SUBJECT MATTERInt. Cl.⁷: C12Q 1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

SEE ELECTRONIC DATABASES

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
SEE ELECTRONIC DATABASES

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CA Medline WPIDS: microsatellite/SSR/STR/SSLP; ligase; polymorphism

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Landegren, Ulf et al. A ligase-mediated gene detection technique. Science. 1988. 241: 1077-1080	All
A	Zirvi, Monib et al. Ligase based detection of mononucleotide repeat sequences. Nuc Ac Res. 1999. 27(24): e40.	All
A	Zirvi, Monib et al. Improved fidelity of thermostable ligases for detection of microsatellite repeat sequences using nucleoside analogs. Nuc Ac Res. 1999. 27(24): e41.	All
A	WO 97/45559 A (CORNELL RESEARCH FOUNDATION) 4/12/97	All
A	WO 97/31256 A (CORNELL RESEARCH FOUNDATION) 28/8/97	All

Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

22 June 2001

Date of mailing of the international search report

27 June 2001

Name and mailing address of the ISA/AU

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU01/00526

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member
WO 97/45559	AU 32160/97, EP 0912761 JP 2000511060T
WO 97/31256	AU 27997/97 CA 2244891 EP 0920440

END OF ANNEX